upon when he expounds scientific theory. It is a little disconcerting, for example, to find (p. 5) Dr. A. A. Robb's theory of time and space referred to as a form of the theory of relativity. The misprint *Rolls'* for *Robb's* is perhaps pardonable carelessness, but the account of Einstein's principle of relativity is so slight and inadequate as to be positively misleading.

(4) "Thomas Sharnol" describes his adventure as "a popular study of the creative mind." It deals with the problem which is the most deeply interesting of all the problems of philosophy, yet the impression the reader is likely to derive is one of bewilderment in regard to the precise concept of "originality" he is invited to study. The book is an amazing pot-pourri of opinions, sentiments grave and gay, quotations from, and references to, writers of all sorts, past and present. The main philosophical motive which serves to hold the attention amidst the author's exuberance is the notion with which Bergson has familiarised us, that life is an impetus finding expression in the new forms it creates. Combined with this is the notion of the structure of unconscious mind which we owe to the discoveries of Freud and Jung. The book is very uneven, sinking at times to sheer triviality, yet pleasantly written and always good-humoured. It is intentionally addressed to the thoughtful man of general culture, and not to the student of technical philosophical problems.

H. W. C

PHYSICS TEXT-BOOKS.

(1) *A Text-book of Physics for the Use of Students of Science and Engineering.* By J. Duncan and S. G. Starling. Pp. xxiii + 1081. (London: Macmillan and Co., Ltd., 1918.) Price 15*s.* net.

(2) *Advanced Text-book of Magnetism and Electricity.* By R. W. Hutchinson. Vol. i., *Magnetism and Electrostatics.* Pp. vii + 372 + Index xii. Vol. ii., *Electrodynamics.* Pp. vi + 468 + Index xii. (London: University Tutorial Press, Ltd., 1917.) Price, 2 vols., 8*s.* 6*d.*

(3) *Lecture Notes on Light.* By J. R. Eccles. Pp. vi + 217. (Cambridge: At the University Press, 1917.) Price 12*s.* 6*d.* net.

(4) *A Manual of Physics, Theoretical and Practical, for Medical Students.* By H. C. H. Candy. Second edition. Pp. viii + 451. (London: Cassell and Co., Ltd., 1918.) Price 7*s.* 6*d.* net.

(1) ENGINEERING students too often look upon physics as little more than a necessary evil, and a book that connects the scientific aspects of the subject with its modern practical applications fills a real need. The authors of this volume—one an engineer and the other a physicist—are to be congratulated on the successful way in which they have accomplished this task.

The book, which is both theoretical and practical, gives a course in dynamics, sound, light, heat, magnetism and electricity, which the authors claim is suitable for intermediate examinations. A student, however, who knew all in the book would be well beyond this stage. Few of the objectionable features of examination text-books occur, and the treatment is lucid and up-to-date. Modern high vacuum pumps, internal-combustion engines, periscopes, range-finders, kinemacolor, dynamos X-rays, and radio-activity, are all considered. Strangely, there is no reference to wireless telegraphy, and some criticism might be offered of the treatment of Newton's "Laws of Motion." Minor details apart, however, the book is most satisfactory and should make a strong appeal to all engineering students.

(2) This is a text-book for final degree examinations, and it will probably appeal to the student who has but little outside assistance. The explanations are very full, and definitions and statements of special importance are printed in heavy type. There is a large collection of problems, taken chiefly from university examination papers, and some of these have been fully worked out. Brief directions for practical work are also given in the text.

The treatment mostly follows on stereotyped lines, but references to modern developments are interspersed, and the chapters on radio-activity, the passage of electricity through gases, and electronic theories are well written, and it is here difficult to find any of the more important developments of the subject that are left untouched.

(3) This book was originally written for the pupils of Gresham's School, Holt, and it probably forms a satisfactory supplement to the author's course of lessons; but it is nevertheless unlikely to make any general appeal.

The master is supposed to "lecture on the lines of the notes and draw the diagrams on the board," whilst the boys enter the diagrams in special copies of the book with blank left-hand pages. The present volume is intended as a guide to the master, and the diagrams—some very carefully drawn—are inserted. The wording throughout is somewhat loose, but in spite of this the author wishes his definitions to be "learnt by heart." On p. 117 the "edge of a prism" is defined! Further, we are told that, "since light travels in straight lines, any one of these straight lines is called a ray of light." The objection to the corpuscular theory is that, "if the corpuscles travelled with this immense velocity, they would possess considerable momentum, of which there is no evidence"; whilst, after three lines of explanation, the wave theory is dismissed as "the one that is now in vogue."

(4) Students working for the First Examination of the Conjoint Board, or even possibly for the London University First Medical, will find in this book most of the information they need. In addition to the ordinary theoretical work, about forty pages of the book are devoted to brief instructions for carrying out a number of illustrative experiments. The style is simple throughout, sometimes even at the expense of accuracy, and descriptions of out-of-date pieces of apparatus still occur. Nevertheless, those who have never studied physics before will find the book very useful. The present edition appears to be a

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very considerable improvement on the first, and there are a number of references to the applications of physics to medicine that may help to bring home to the student the dependence of his future work on the more fundamental sciences.

G. D. W.

MEDICINE AND THE LAW.

Lyon's Medical Jurisprudence for India, with Illustrative Cases. By Lt.-Col. L. A. Waddell. Sixth edition. Pp. xiii+783. (Calcutta and Simla: Thacker, Spink, and Co.; London: W. Thacker and Co., 1918.) Price 28*s*. net.

THE reviewer remembers the appearance of the first edition of this work in 1888, for in that year he passed from military to civil employ under the Government of India and became a district civil surgeon. That officer, to a certain extent, combines the duties of police surgeon and coroner, since all medico-legal cases are submitted to him. Upon his report further action depends. Where the use of poisons is suspected he passes on the viscera or other material to the chemical examiner, whose report is attached to the surgeon's record. In the Presidency cities where there exist coroners' courts a special surgeon is appointed for medico-legal work. In Calcutta and Bombay that officer is also lecturer on medical jurisprudence in the medical college. The later editions controlled by Lt.-Col. Waddell have maintained the reputation which Lyon's work acquired at its first appearance. With advances in research and experience new tests and methods have been added, while old technique has been improved. Time brings few changes in fundamentals, but, as knowledge increases, science follows more closely the track of the criminal and provides more certain help to those who administer the law.

There can be no more profitable school for the student of forensic medicine than a large Indian city such as either Bombay or Calcutta. Lyon took his material from the police records of Bombay and from that classic storehouse of illustrative cases erected by Norman Chevers. As regards toxicology Lt.-Col. Waddell was specially fitted for the editorial work through practical knowledge acquired as a Government chemical examiner in Calcutta. It is again, in this new edition, from Bombay that much help has come. In the "Preface" Lt.-Col. Waddell records indebtedness to the experience of Prof. Arthur Powell, lecturer on medical jurisprudence at the Bombay University.

Very useful advice is given to the medical witness as to demeanour in court and as to the character of his replies to questions. This advice is amplified in the appendices, where examples are given of the kind of question which may be expected in particular cases.

Now that well-deserved praise has been given, is there anything lacking, anything that might be amended? While most of the chapters contain the latest information, it is noticeable that chap. xxvii., "Snake Venoms," gives no reference to the valuable recent researches of Acton and Knowles ("Ind. Jour. Med. Res.," 1914, pp. 46–148). This paper "throws the searchlight into many dark places, straightens some crooked ways, and is altogether illuminating and inspiring" (Alcock).

Again, one is surprised to find scorpions and spiders classed as "venomous insects" (p. 592). Errors which might be due to proof reader or printer are few and of no great importance. "Myer" for "Mayer" (pp. 623, 624) might lead to momentary difficulty, but the reagent is well known. The book has a good general index and also a "Vernacular Index of Plants and Drugs." We notice some differences in the spelling of certain names in the text and in the latter index. This may be due to different hands using slightly different methods of transliteration. As cases of self-inflicted injuries to support false charges are rare in England, it may be mentioned that the case of Jitan Ali Mir (ref. p. 573) was fully reported, under the title "Two Interesting Medico-legal Cases."

J. H. T. W

OUR BOOKSHELF.

Department of Commerce, U.S. Coast and Geodetic Survey. Terrestrial Magnetism. United States Magnetic Tables and Magnetic Charts for 1915. By D. L. Hazard. Pp. 256+maps 5 in pocket. (Washington: Government Printing Office, 1917.)

THE latest American publication of similar scope referred to 1905, but declination charts for 1910 have been published. The observing stations used for the present charts exceeded in number those used for the 1905 charts by some 50 per cent. For declination 405 sea observations were used, and results from 6120 land stations, including 1129 in Canada, Mexico, and the West Indies. The first set of tables give declination (D), inclination (I), and horizontal force (H) results obtained at successive epochs at repeat stations. The D and I results are given to the nearest 1′, the H results to the nearest 10γ. The second set of tables gives the corrections for reducing observations taken at different epochs and in different geographical positions to the epoch January 1, 1915. They are followed by tables giving D, I, and H, first as observed at the several stations, then as reduced to January 1, 1915. The last set of tables gives for each whole degree of latitude and longitude the values for January 1, 1915, of D, I, H, total force (T), and north, east, and vertical (V) components. Latitudes from 19° to 51° N. are included. At 19° N. the longitudes range from 74° to 105° W., while at 47° N. they range from 64° to 128° W. In these final tables the D and I results go to 0·1°, the force results to 0·001 C.G.S.

A pocket at the end of the volume contains charts of D, I, H, V, and T for the epoch January 1, 1915, the lines of equal values of the elements being in red. The first three charts

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